

Public Comment and Response Document, Bacteria TMDL for Fourmile Creek, Henrico County, Virginia, 2004, Public Comment Period January 29, 2004 to February 28, 2004.

Questions at Public Meeting, Fairfield Library, January 29, 2004:

1. **Is flow taken into account in the study?** Flow was taken into account for the study. Mean daily flows for Fourmile Creek from 1951 – 2003 were correlated from the gaging station Piscataway Creek near Tappahannock, VA (#01669000). Because the study dates were selected before any knowledge of rainfall during the period, the rainfall which occurred randomly influenced the study results.
2. **Was BST performed on E. coli or fecal coliform?** BST was performed on E. coli.
3. **How expensive is DNA analysis?** The cost of DNA analysis is approximately \$500 per sample.
4. **Does the reduction have to get to zero percent violations?** The USEPA requires that TMDL load allocations be determined for zero percent violations of the water quality standard. Please also see comment # 7 below.
5. **Does EPA require states to do TMDLs?** The Clean Water Act of 1972 requires states to develop TMDLs on impaired waters.
6. **Are we saying that wildlife does not matter?** Wildlife bacteria load is considered a natural effect from the presence of wildlife species in the watershed. Wildlife bacteria load is very important, but because wildlife is considered naturally present in the watershed, the TMDL does not seek reductions in wildlife bacterial load or populations. This includes Canada geese, even though a sub-species of non-migratory Canada geese inhabit Virginia along with the migratory population.
7. **Is the 10% violation rate an EPA requirement?** The 10% violation rate for which a waterbody is placed on the Impaired Waters list is an EPA required water quality assessment criteria in the biennial water quality assessment reports to EPA. The same 10% violation rate is used to determine that the waterbody meets the water quality standard as TMDL implementation improves water quality.
8. **How does the highest fecal value sway the study?** The highest E. coli value and load is used to determine the % reduction from the elevated bacterial load in the impaired stream down to the allowable TMDL bacterial load in the stream. This makes the % reduction conservative and part of the implicit margin of safety, because the reduction in the stream is always greater than or equal to the greatest difference between the TMDL and the most elevated E. coli load found in the samples.
9. **Is QAQC being done on the BST, E. coli, and fecal sampling and analysis?** Yes, sampling and analysis QAQC protocols for DEQ and the consultant performing the BST monitoring and analysis have been approved by the DEQ QAQC administrator.
10. **Would EPA know that swamps have low pH?** Yes, EPA is aware of this, but they may want states to more accurately classify streams as swampwaters. Assessing streams as impacted by low pH from swamp conditions requires states to create a swampwater class of waters with an appropriate low-end pH water quality standard.
11. **How likely is EPA to approve this TMDL?** The load duration TMDL method is new for 2004, and EPA has approved the method as designed. The chances are good that EPA will approve this TMDL.
12. **Have we considered the effects of new home development on TMDLs?** The TMDL process assesses current water quality problems evidenced by water quality sample data. However there is a margin of safety built into the TMDL load duration method (see question #8) which could be used to accommodate increased home production. In addition, one of the wasteload allocation scenarios used for impaired waters with a sewage treatment facility includes a five-fold increase in bacterial discharge due to treatment plant expansion for growth.

13. **Are there any TMDLs in the Implementation phase?** There are three TMDLs with EPA approved Implementation Plans: North River in Rockingham County, Middle Fork Holston River in Washington County, and Blackwater River in Franklin County. These may be viewed on the web at <http://www.deq.state.va.us/tmdl/tmdlrpts.html#implan> at the bottom of the webpage. Each of these has implementation activities ongoing.
14. **Are we considering decreasing wildlife populations over the years?** Virginia and EPA are not proposing the elimination of wildlife to allow for the attainment of water quality standards. The reduction of wildlife or changing a natural background condition is not the intended goal of a TMDL. Therefore DEQ is not taking into consideration expanded wildlife populations and possible increases in bacterial load in the future.

Comments written or emailed to DEQ during the public comment period, summarized below, with responses, and attached:

February 4, 2004:

Comment: DEQ Piedmont Regional Office permit writer staff confirmed that the Capital Region Airport Commission does not have a reissuance application for the RIC airport requesting to add chlorine surrogate limits as stated in the draft TMDL report. The permit is an individual stormwater permit and does not address fecal coliform bacteria or disinfection of the stormwater runoff.

Response: This has been corrected in the draft report.

February 16, 2004:

Comment: County of Henrico Public Works staff located 200 unregulated point sources, or “straight pipes” during a county-wide stream assessment undertaken in 2000. They provided pipe diameter, type and quality of discharge, and latitude / longitude of each unregulated point source pipe. Henrico County staff request that DEQ staff investigate these pipes as part of any implementation plan.

Response: DEQ appreciates that the County of Henrico decided to provide the locations of these pipes. DEQ pollution response staff has begun investigation of these pipes to include sampling and source identification. The investigation is anticipated to take one year. This investigation will be included in the implementation plan if not complete by the time the plan is written.

February 25, 2004:

Comment: The Varina Environmental Protection Group expressed disappointment that the 1998 and 2002 impaired waters lists did not recommend a moratorium on the reduction of building of subdivisions and other development in the Four Mile Creek area. The group also asked that the TMDL report include sampling for pesticides or other pollutants. The group asked if DEQ or the EPA can minimize future development in the Four mile Creek watershed. Specifically the group asked if the state will require Henrico County to place a moratorium on any further subdivisions and commercial building until pollution rates in the next several years are shown to decrease rather than increase.

Response: DEQ has no regulations by which to recommend or require a locality to place a moratorium on development. TMDL monitoring is restricted to the parameter that caused the waterbody to be placed on the impaired waters list. This is due to the vast expense related to the number of TMDLs to be developed by 2014, and the limited funds available for the monitoring. Therefore pesticides sampling, at a cost in excess of \$500 per sample, cannot be performed for the Four Mile Creek Bacterial and pH TMDL.



COMMONWEALTH OF VIRGINIA
COUNTY OF HENRICO

ROBERT C. THOMPSON, P.E.
DIRECTOR OF PUBLIC WORKS
COUNTY ENGINEER
(804) 501-4393

February 16, 2004

RECEIVED
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PRO

Mark Alling
Department of Environmental Quality
4949 A Cox Road
Glen Allen, VA 23060

Dear Mr. Alling,

Recently, the Department of Environmental Quality (DEQ) hosted several meetings regarding draft Total Maximum Daily Load (TMDL) requirements for certain stream reaches in Henrico County. Henrico County staff attended these meetings and expressed concerns about ways to address some of the sources of the identified pollutants, specifically fecal loads. As you recall, we raised the issue of unregulated point sources as potentially contributing significant pollutant loads to our streams. Although identification of these point sources is often a difficult task, Henrico County has identified approximately 200 such locations as a result of a County-wide stream assessment and stream corridor inventory conducted in the fall of 2000.

During the development of the County's Stream Assessment / Watershed Management Program, the County conducted habitat assessments and stream corridor inventories of approximately 440 miles of stream through out the County. Generally, all streams with 100 acres or more drainage area were walked by field teams. Among the many items (utility structures, stream crossings, dumpsites, areas of erosion, etc.) we identified within the stream corridor was the location of pipes discharging to the stream. We also made note of the size and type of the pipe and the nature of the discharge, if any. In fact, on the first day of the assessments, two pipes were found that were the direct sewage outfalls from two residences. These straight pipes were immediately turned over to the local Health Department and Department of Public Utilities and corrected.

Although many of the pipes identified are County approved storm sewer outfalls, there are approximately 200 that are smaller than the minimum allowable diameter for storm sewer (15 inches) and their source is unknown. We have previously met with DEQ representatives to determine options for testing these pipes. As I am sure you are aware most streams are located on private property (homeowners own to center line of stream). Therefore, the ability of the County to legally test and enforce pipe disconnections came into question. It was our understanding that our staff could act as an agent of the State Water Control Board and perform inspections for these outfall pipes (see attached correspondence). Unfortunately a decision was made at DEQ not to allow this. We then offered to turn the location of these pipes over to DEQ for further

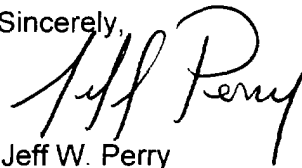
investigation, however we have received no request to date. Hence, for more than a year, we have had known outfall pipes discharging to State waters that have not been inspected. A copy of our previous correspondence is included for your reference.

Since developing an implementation plan to eliminate sources of pollutants will be required as a component of the TMDL, we feel that one of the first steps for any implementation plan is the identification and elimination of potential sources. We are forwarding you a map of outfall pipe locations in the watersheds of the impaired stream segments. We are also providing an Arc View shape file showing the location of all the questionable pipes in the County. Obviously, we are frustrated as we have already identified outfall pipes (potential sources) and feel the investigation of these pipes should have occurred some time ago. If these pipes had been investigated and all identified violations corrected, additional controls in the form of a TMDL may not have been needed.

It is our understanding that DCR will be responsible for preparing TMDL implementation plans for impaired watersheds. We are hereby requesting that investigation of these pipes by DEQ be included in the TMDL implementation plans. Prior to spending valuable local resources to identify additional possible pollutant sources in a watershed, DEQ should investigate those that have already been identified. We have always felt that not only would this information be valuable for our goal of improving water quality, but would be useful information for other localities who are contemplating similar stream inventories and/or have impaired waters.

We look forward to your response and if you have any further questions regarding this matter, you can reach me at 501-4539.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Perry". The signature is fluid and cursive, with the first name "Jeff" and last name "Perry" clearly distinguishable.

Jeff W. Perry
Environmental Manager

Attachments

pc: Joseph Maroon, Director, Virginia Department of Conservation and Recreation

September 16, 2002

Mr. Robert G. Burnley
Director, Virginia Department of Environmental Quality
629 East Main Street
P.O. Box 10009
Richmond, Virginia 23240-0009

RE: Authority for Private Pipe Investigation in
Henrico County

Dear Mr. Burnley:

In August 2001, Henrico County adopted an innovative program to address stormwater quality requirements mandated by Section 402(p) of the Clean Water Act (the National Pollutant Discharge Elimination System) and the Chesapeake Bay Preservation Area (CBPA) Designation and Management Regulations. Development of the Stream Assessment / Watershed Management Program (Program) took over four years during which the Department of Environmental Quality, the Department of Conservation and Recreation, and the Chesapeake Bay Local Assistance Department were routinely consulted. Since its adoption, the Program has been found consistent with both the CBPA Regulations and the Virginia Stormwater Management Regulations. The Program is also a component of the County's Virginia Pollutant Discharge Elimination System (VPDES) permit.

In developing the Program, an extensive assessment and inventory of the streams throughout the County was conducted. All streams with 100 acres or more of drainage area (approximately 440 miles) were walked and evaluated. In addition to conducting habitat assessments of the stream reaches, we identified and inventoried items and conditions such as eroded streambanks, road crossings, stream obstructions and pipes within the stream corridor.

The inventoried pipes should be of particular interest to DEQ since they discharge directly to state waters. During the stream evaluations, we did identify illicit discharges from several of these pipes and addressed them immediately. However, no discharge was evident from the majority of the pipes and therefore we were unable to determine whether or not the pipes constitute an illicit discharge to state waters. Although some of the pipes are clearly outfalls of the public storm sewer system, approximately 200 of the inventoried pipes are smaller than the minimum allowable size for storm sewer (15 inches in diameter). Many of these could be roof or foundation drains. However, they could also be gray water discharges (from washing machines) or sewage outfalls from

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individual residences (two pipes found on the first day of the stream assessments were the main sewage outfalls for dwellings.)

In order to determine the source of these pipes, additional investigation and monitoring is needed and the County is ready to investigate the pipes. However, we feel we lack the authority to conduct monitoring of private pipes that discharge to state waters. As you are aware, the County's jurisdiction established by the VPDES permit is limited to the municipal storm sewer system. We are unaware that the current or proposed language of our VPDES permit authorizes County staff to conduct such investigations. In fact, Mr. Jeff Perry contacted Mr. Mark Alling of your staff in September 2001 concerning this issue and Mr. Alling responded with the following quote from the state water control law:

Section 62.1 - 44.20: "Right to entry to obtain information, etc... - Any duly authorized agent of the Board may, at reasonable times and under reasonable circumstances, enter any establishment or upon any property, public or private, for the purposes of obtaining information or conducting surveys or investigations necessary in the enforcement of the provisions of this chapter." - page 423, Code of Virginia 1950, Volume 9, 1998 Replacement Volume.

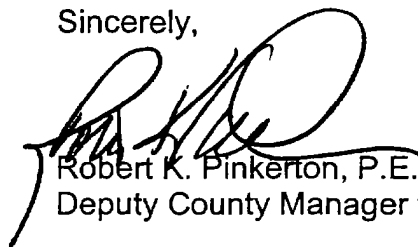
We consulted the County Attorney's office and it is their opinion that we would need to be "duly authorized" by the State Water Control Board in order to conduct the pipe investigations. Based on this response, we contacted Mr. Martin Ferguson and requested a meeting to discuss becoming an authorized agent of the Board. The meeting was held on November 15, 2001 and Mr. Ferguson, Mr. James Golding, and Mr. Burt Tuxford from DEQ were present and Mr. Jeff Perry and Mr. Keith White attended from Henrico County. After discussing the issue, it was our understanding that instead of pursuing authority through the Board, appropriate language would be added to our VPDES permit authorizing County staff to conduct the necessary investigations and monitoring.

Recently, we were contacted by Ms. Oula Shehab of your Department to discuss draft language for the reissuance of our VPDES permit. When we asked about the authority language she indicated that she was unaware of the issue. Ms. Shehab later informed us that according to Mr. Ferguson, the County has the authority to investigate and monitor the pipes. However, there was no indication where the authority was provided.

Mr. Robert G. Burnley
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As I mentioned earlier, the County is in a position to proceed with investigating the pipes as long as we have clear authority to do so. If DEQ or the State Water Control Board does not provide the County with authority, we will turn the inventory information over to DEQ for your information and request that you notify us of the results of your investigations. If you have any questions, please contact Mr. Jeff Perry at 501-4539.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. K. Pinkerton', is written over the typed name.

Robert K. Pinkerton, P.E.
Deputy County Manager for Community Operations

C: Mr. Jeff Perry, Environmental Management Engineer
Mr. Keith White, Environmental Engineer

RKP/KOW/lhc



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.state.va.us

Robert G. Burnley
Director
(804) 698-4000
1-800-592-5482

October 3, 2002

Mr. Robert K. Pinkerton, P.E.
Deputy County Manager for
Community Operations
County of Henrico
P.O. Box 27032
Richmond, Virginia 23273-7032

Dear Mr. Pinkerton:

In response to your letter of September 16 to Robert Burnley, the 1990 EPA Phase 1 Storm Water Regulations required Henrico County, as a designated medium municipal separate storm sewer system (MS4), to develop a storm water management program (SWMP) to reduce the impacts of the County's MS4 storm water discharges to the maximum extent practicable. In the permit application, which was submitted to DEQ in May 1993, the County was required to demonstrate that they had adequate legal authority to control industrial discharges to the MS4, prohibit illicit discharges to the MS4, control spills and dumping or disposal of materials to the MS4, require compliance with conditions in ordinances, permits, contracts or orders, and carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the MS4.

In the permit that was issued by DEQ to Henrico County on July 23, 1997, Special Condition #3 required the County to operate pursuant to the established legal authority to carry out all parts of the SWMP. If the existing legal authority was not sufficient to carry out all parts of the SWMP, the permit required the County to seek additional authority as necessary and appropriate, and to supply a schedule and description of the proposed additional authority in the first Annual Report that was submitted to DEQ.

In response to a Notice of Violation that the County received for failing to perform any of the permit required storm water discharge monitoring, the County proposed to modify their permit and the SWMP to substitute the Stream Assessment Program for the storm water discharge monitoring requirement. DEQ agreed to this and has drafted a permit for reissuance with the new Stream Assessment Program as a requirement. If the County does not have the legal authority to carry out the program as described, then they must seek the additional authority through ordinance, order or similar means, and supply a schedule and description of the proposed additional authority in the next Annual Report that is submitted to DEQ. The Stream Assessment Program is a County program, not a DEQ program, and as

Mr. Robert K. Pinkerton, P.E.
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such, it is not appropriate for the State Water Control Board to "duly authorize" the County as its agent to carry out these investigations.

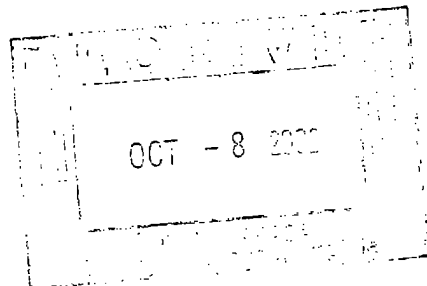
If you have any questions regarding this matter or your draft permit, please contact Ms. Oula Shehab of the Piedmont Regional Office.

Sincerely,



Richard F. Weeks, Jr.
Deputy Director for Operations

cc: Martin Ferguson, DEQ
Gerry Seeley, DEQ





COMMONWEALTH OF VIRGINIA
COUNTY OF HENRICO

ROBERT C. THOMPSON, P.E.
DIRECTOR OF PUBLIC WORKS
COUNTY ENGINEER
(804) 501-4393

October 18, 2002

Mr. Richard F. Weeks, Jr.
Deputy Director for Operations
629 East Main Street
P.O. Box 10009
Richmond, Virginia 23240-0009

RE: Authority for Private Pipe Investigation in Henrico County

Dear Mr. Weeks:

We have received your letter dated October 3, 2002 related to our questions concerning local authority for investigation of private pipes. Based on your letter, we feel there is a misunderstanding with regards to these pipes and the County's Stream Assessment / Watershed Management Program (Program). I would like to offer the following discussion in hopes that it may clarify the County's position.

In response to a Notice of Violation issued by DEQ, the County proposed a modification to its municipal storm sewer system (MS4) consisting of a program of stream assessments in lieu of stormwater discharge monitoring. The assessments included habitat assessments of all stream segments with 100 acres or more of drainage area and bioassessments to be conducted on a regular basis at various locations throughout the County. This alternative approach was accepted by DEQ and the assessments were completed in the Fall of 2000. The information gathered during the assessments was used to develop the Program. The Program was subsequently determined to be consistent with the Virginia Stormwater Management Regulations in January 2002.

During development of the Program, the County did in fact pursue and obtain a state code revision to authorize the County to collect funds as a means of complying with the stormwater management requirements. This revision became effective on July 1, 2001. **To clarify one point of confusion, the County currently has the authority to implement all required components of the Program.**

While we were conducting the stream assessments, we felt much could be gained by identifying other influences that could be impacting the stream health within the County. Items such as dumpsites, stream obstructions and erosion areas were identified and many have been addressed. We also identified numerous pipes that discharge directly to the stream system. Although many of these pipes are part of the County's MS4, approximately 200 are not. Some of

Mr. Richard F. Weeks, Jr.
October 18, 2002
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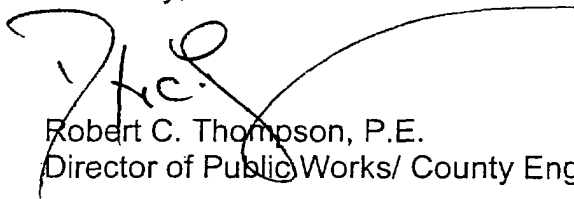
these were easily identified illicit discharges and were immediately addressed. The origins of others are unknown. There are three important points to mention concerning the pipes of unknown origin:

- 1) **The pipes discharge into state waters, and are therefore outside the locally regulated MS4,**
- 2) **Additional investigation is required to identify the origins of the pipes, and**
- 3) **The pipes are on private land.**

In discussing the negative impacts these pipes could have on stream health and our desire to address them, we were advised that we lacked the authority to pursue them. Subsequently, we began discussions with DEQ to obtain this authority.

Instead of a continued letter campaign, we would like to meet with you and other appropriate DEQ staff to resolve this issue. I'm sure we can come to an agreement regarding these pipes, especially since we share a common goal – to improve the quality of our stream systems. If you have any questions, please contact Jeff Perry at 501-4539.

Sincerely,



Robert C. Thompson, P.E.
Director of Public Works/ County Engineer

C: David Paylor, Deputy Secretary of Natural Resources
Robert G. Burnley, Director, DEQ
Oula Shəhab, Environmental Specialist, DEQ
Robert K. Pinkerton
Jeff Perry



COMMONWEALTH OF VIRGINIA
COUNTY OF HENRICO

ROBERT C. THOMPSON, P.E.
DIRECTOR OF PUBLIC WORKS
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(804) 501-4393

October 18, 2002

Ms. Oula K. Shehab, Ph. D.
Environmental Specialist
Department of Environmental Quality
4949-A Cox Road
Glen Allen, Virginia 23060

RE: VPDES Permit VA0088617 Henrico County MS4
Draft Permit Language

Dear Ms. Shahab:

We have received your letter dated October 11, 2002 discussing the Department of Environmental Quality's responses to our comments concerning the draft language for the County's VPDES permit. According to your letter, DEQ staff does not concur with two of the County's recommended revisions.

One of the outstanding issues concerns the County's authority to conduct further investigations of pipes identified during the stream assessments. **These pipes outfall directly into State waters, not the County's MS4 system.** We did receive a letter from Mr. Richard Weeks, Deputy Director for Operations discussing this issue. However, there appears to be a misunderstanding with regards to these pipes and the County's Stream Assessment / Watershed Management Program. Therefore, we are requesting a meeting with Mr. Weeks and other appropriate DEQ staff to resolve this issue. A copy of this request is attached. We further request that the draft permit language not be finalized until that meeting is held.

The other outstanding issue concerns the VPDES General Permit for Discharges from Construction sites. In your letter, you state that "The draft permit is requiring the submittal of a list of all land disturbance projects and their acreage that the county has granted to developers."

Please note that this is not what the draft language requires. The draft permit language reads

Oula K. Shehab, Ph.D.
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Page 2

Within 30 days of approval of a site plan, the permittee shall notify the Department of Environmental Quality, Piedmont Regional Office of the owner and site location of all land disturbing activities of greater than 5 acres. Upon final DEQ promulgation of regulations which incorporate the federal regulations (40 CFR 122.26 Phase II Storm Water), the permittee shall notify the Department of Environmental Quality, Piedmont Regional Office of the owner and site location of all land disturbing activities greater than one acre...

This language does not require a year-end listing of approved projects but a project-by-project reporting that will result in significant paperwork for County staff. In addition, the proposed language also requires owner information and specific location of the projects. In the County's opinion, this regular reporting of potential violators does constitute *administration* of DEQ's General Permit for Construction Activities, albeit on the enforcement side of the permit requirements.

Although we continue to request the language be removed from the draft permit, we will agree to provide, as part of our annual report, a listing of projects authorized for construction along with the resulting disturbed acreage and the hydrologic unit in which the project is located. This is very similar to a report to we currently provide to the Department of Conservation and Recreation on an annual basis.

Once these remaining issues are resolved, we will sign and forward the Public Notice Authorization to you.

If you have any questions, please contact Keith White at 501-7475.

Sincerely,



Robert C. Thompson, P.E.
Director of Public Works/County Engineer

C: David Paylor, Deputy Secretary of Natural Resources
Robert G. Burnley, Director, DEQ
Richard F. Weeks, Jr., Deputy Director for Operations, DEQ
Robert K. Pinkerton
Jeff Perry

ID	TYPE	PIPEDIAM	DSCHRGTP	DISCHARGE FROM ADJACENT PONDS	DSCHRGQUAL
ZTI05.P02	Pipe	12.000000	None		Clear
ZTI16.P01	Pipe	4.000000	None		
ZTI16.P02	Pipe	4.000000	None		
ZTI16.P03	Pipe	4.000000	None		
GCR16.P02	Pipe	3.000000	UNKNOWN		Clear
GCR04.P02	Pipe	12.000000	ORANGE MUD		IRON FLOCCULENT,A ND MUD
GCR06.P01	Pipe	12.000000	SPRING?		Clear
GCR14.P03	Pipe	12.000000	None		
GCR13.P06	Pipe	2.000000	UNKNOWN		Clear
GCR13.P05	Pipe	4.000000	Industrial		
GCR13.P04	Pipe	2.000000	Stormwater		
GCR13.P03	Pipe	12.000000	None		
GCR13.P01	Pipe	12.000000	None		
GCR16.P01	Pipe	1.000000	Stormwater		Clear
GCR12.P01	Pipe	4.000000	UNKNOWN		UNKNOWN
GCR26.P01	Pipe	12.000000	None		
GCR26.P02	Pipe	1.000000	None		
GCR26.P03	Pipe	2.000000	Industrial		Iron Flocculent
GCR26.P04	Pipe	2.000000	Industrial		UNKNOWN
GCR21.P01	Pipe	12.000000	Stormwater		
GCR21.P02	Pipe	12.000000	Stormwater		
GCR34.P01	Pipe	4.000000	None		
BBR10.P02	Pipe	2.000000	NONE, STORMWATER		
BBR10.P01	Pipe	2.000000	NONE,STORMWATER		
BBR11.P01	Pipe	2.000000	SPRING		Clear
BSC25.P01	Pipe	1.000000	Stormwater		
BSC32.P01	Pipe	2.000000	None		
SPD10.P01	Pipe	6.000000	STORMWATER OR POND OUTLET		Iron Flocculent
YSC02.P01	Pipe	2.000000	None		
UFC03.P01	Pipe	12.000000	Stormwater		
UFC01.P02	Pipe	4.000000	Stormwater		
UFC01.P01	Pipe	6.000000	Roof Drain (dry)		
MBR08.P03	Pipe	12.000000	None		
MBR08.P02	Pipe	12.000000	None		
MBR08.P01	Pipe	8.000000	None		Clear
MBR07.P03	Pipe	12.000000	None		

MBR10.P01	Pipe	4.000000	UNKNOWN	N/A
ALC02.P01	Pipe	8.000000	None	TOILET PAPER
ALC05.P02	Pipe	4.000000	Sewage	NONE
ALC18.P02	Pipe	8.000000	Stormwater	Clear
ALC07.P01	Pipe	3.000000	UNKNOWN	UNKNOWN
ALC08.P01	Pipe	4.000000	None	N/A
ALC09.P03	Pipe	4.000000	None	OIL SHEEN AND IRON FLOCCULENT
AMC01.P03	Pipe	8.000000	UNKNOWN	UNKNOWN
ALC05.P08	Pipe	3.000000	None	Clear
ALC12.P02	Pipe	2.000000	Stormwater	Clear
ALC10.P11	Pipe	12.000000	Stormwater	UNKNOWN
ALC10.P10	Pipe	4.000000	UNKNOWN	UNKNOWN
ALC10.P09	Pipe	4.000000	UNKNOWN	UNKNOWN
ALC10.P08	Pipe	3.000000	UNKNOWN	UNKNOWN
ALC10.P07	Pipe	3.000000	UNKNOWN	UNKNOWN
ALC10.P06	Pipe	4.000000	Sewage	NONE
ALC10.P05	Pipe	3.000000	Sewage	Clear
ALC10.P04	Pipe	4.000000	Sewage	Clear
RAC22.P01	Pipe	12.000000	Stormwater	Clear
RAC11.P03	Pipe	6.000000	Industrial	NO FLOW
RAC11.P02	Pipe	4.000000	Industrial	NO FLOW
WOC47.P01	Pipe	6.000000	Industrial	Clear
YSR03.P12	Pipe	1.500000	None	
YSR03.P11	Pipe	1.500000	None	
YSR03.P09	Pipe	8.000000	None	
YSR03.P08	Pipe	3.000000	Stormwater	Clear
YSR03.P07	Pipe	3.000000	None	
YSR09.P01	Pipe	4.000000	None	
YSR09.P02	Pipe	4.000000	None	
YSR09.P03	Pipe	12.000000	None	
YSR03.P01	Pipe	3.000000	None	
YSR03.P02	Pipe	3.000000	None	
YSR03.P03	Pipe	3.000000	None	
YSR03.P04	Pipe	5.000000	Stormwater	Clear
YSR03.P05	Pipe	5.000000	None	
YSR03.P06	Pipe	3.000000	None	
YSR12.P01	Pipe	4.000000	None	

YSR02.P02	Pipe	6.000000	None	Iron Flocculent
YSR02.P04	Pipe	5.000000	None	Iron Flocculent
YSR02.P06	Pipe	12.000000	None	Clear
YSR02.P07	Pipe	12.000000	None	Clear
YSR01.P03	Pipe	4.000000	Stormwater	
YSR01.P02	Pipe	12.000000	Stormwater	
YSR01.P04	Pipe	4.000000	Stormwater	
YSR01.P01	Pipe	5.000000	None	
XGW10.P01	Pipe	12.000000	None	
XGW07.P02	Pipe	8.000000	None	
WOC63.P04	Pipe	10.000000	None	N/A
WOC63.P02	Pipe	10.000000	None	N/A
WOC63.P05	Pipe	10.000000	None	N/A
NTB02.P06	Pipe	12.000000	None	NONE
NTB02.P01	Pipe	3.000000	None	NONE
NTB01.P04	Pipe	4.000000	None	NONE
NRB01.P03	Pipe	12.000000	None	NONE
NRB04.P04	Pipe	12.000000	Stormwater	Clear
NRB04.P03	Pipe	12.000000	None	NONE
NRB02.P02	Pipe	12.000000	None	NONE
NRB07.P01	Pipe	4.000000	Roof Drain (dry)	NONE
NRB09.P01	Pipe	6.000000	None	NONE
NRB09.P03	Pipe	4.000000	Roof Drain (dry)	NONE
NRB09.P05	Pipe	4.000000	Roof Drain (dry)	NONE
NRB09.P07	Pipe	3.000000	Roof Drain (dry)	NONE
UJB02.P11	Pipe	6.000000	None	NONE
UJB03.P01	Pipe	12.000000	None	
UJB03.P04	Pipe	12.000000	None	
UJB03.P07	Pipe	12.000000	None	
UJB03.P08	Pipe	12.000000	POSSIBLE ILLICIT	
DSR01.P10	Pipe	12.000000	UNKNOWN	Clear
VTR12.P02	Pipe	4.000000	None	NONE
VTR12.P07	Pipe	4.000000	None	
VTR14.P01	Pipe	3.000000	None	
VTR13.P01	Pipe	12.000000	None	
VTR13.P02	Pipe	12.000000	None	
VTR10.P01	Pipe	6.000000	None	

VTR10.P02	Pipe	6.000000 None	Clear	
VTR10.P03	Pipe	6.000000 None	Clear	
VTR10.P04	Pipe	6.000000 None		
VTR10.P05	Pipe	6.000000 None		
VTR10.P06	Pipe	6.000000 None		
QRB07.P03	Pipe	12.000000 Stormwater		
QRB07.P02	Pipe	12.000000 Stormwater		
QRB02.P02	Pipe	12.000000 Stormwater		
QRB06.P02	Pipe	12.000000 Stormwater		
QRB06.P01	Pipe	6.000000 Stormwater		
LTW05.P03	Pipe	12.000000 None		
LTW05.P01	Pipe	4.000000 Roof Drain (dry)		
LTW04.P07	Pipe	12.000000 Industrial		
LTW07.P01	Pipe	4.000000 Roof Drain (dry)		
LTW01.P02	Pipe	4.000000 Roof Drain (dry)		
LTW06.P05	Pipe	3.000000 Roof Drain (dry)		
LTW06.P04	Pipe	3.000000 Roof Drain (dry)		
LTW06.P03	Pipe	3.000000 Roof Drain (dry)		
HLS07.P01	Pipe	12.000000 None		
HLS02.P03	Pipe	12.000000 UNKNOWN	IRON TINTED	
HLS02.P02	Pipe	6.000000 UNKNOWN	IRON TINTED	
HLS02.P01	Pipe	5.000000 UNKNOWN	Clear	
HLS21.P01	Pipe	2.000000 UNKNOWN	Clear	
HLS14.P01	Pipe	3.000000 UNKNOWN		
DRN51.P08	Pipe	12.000000 None		
DRN51.P14	Pipe	4.000000 Roof Drain (dry)		
KUC08.P03	Pipe	3.000000 Stormwater		
KUC07.P02	Pipe	3.000000 Stormwater		
UPB25.P02	Pipe	12.000000 Stormwater		
UPB21.P03	Pipe	4.000000 Stormwater		
UPB21.P02	Pipe	10.000000 Stormwater		
UTB02.P04	Pipe	3.000000 Roof Drain (dry)		
UTB02.P01	Pipe	10.000000 Stormwater		
UTB01.P01	Pipe	4.000000 Stormwater		
UPB14.P02	Pipe	10.000000 Stormwater		
UPB14.P01	Pipe	3.000000 Stormwater		
UPB13.P02	Pipe	4.000000 WATER INTAKE		

UFC04.P03	Pipe	6.000000 Stormwater	Clear
UFC04.P04	Pipe	6.000000 Stormwater	
UFC04.P05	Pipe	6.000000 Stormwater	
UPB11.P10	Pipe	6.000000 Stormwater	Clear
UPB11.P09	Pipe	6.000000 Stormwater	Clear
UPB11.P08	Pipe	6.000000 Stormwater	Clear
UPB11.P07	Pipe	6.000000 Stormwater	Clear
UPB11.P06	Pipe	6.000000 Stormwater	Clear
UPB11.P05	Pipe	6.000000 Stormwater	Clear
UPB11.P04	Pipe	6.000000 Stormwater	Clear
UPB11.P03	Pipe	6.000000 Stormwater	
UPB11.P02	Pipe	6.000000 Stormwater	
UPB11.P01	Pipe	6.000000 Stormwater	
UPB10.P02	Pipe	4.000000 Roof Drain (dry)	
UPB08.P02	Pipe	4.000000 Stormwater	
CRC41.P01	Pipe	2.000000 PUMPING FROM CREEK	
CRC48.P01	Pipe	12.000000 None	
CRC50.P01	Pipe	2.000000 UNKNOWN	
CRC33.P02	Pipe	12.000000 None	
CRC32.P02	Pipe	12.000000 None	
CRC35.P01	Pipe	6.000000 None	
CRC25.P01	Pipe	12.000000 None	
RAC34.P01	Pipe	6.000000 UNKNOWN	NONE
RAC40.P01	Pipe	6.000000 Sewage	NONE
THB02.P05	Pipe	4.000000 Roof Drain (dry)	
THB02.P07	Pipe	12.000000 None	
THB02.P09	Pipe	4.000000 Roof Drain (dry)	
THB02.P11	Pipe	12.000000 None	
UHB03.P11	Pipe	3.000000 Roof Drain (dry)	
UHB03.P10	Pipe	3.000000 Roof Drain (dry)	
UHB03.P09	Pipe	3.000000 Roof Drain (dry)	
UHB03.P08	Pipe	3.000000 Roof Drain (dry)	
UHB03.P07	Pipe	3.000000 None	
UHB03.P02	Pipe	3.000000 Roof Drain (dry)	
UHB03.P01	Pipe	3.000000 NON-STORMWATER/POSSIBLE ILLICIT	
UHB04.P02	Pipe	10.000000 Stormwater	Clear
UHB04.P03	Pipe	10.000000 None	

UHB02.P02	Pipe	4.000000 None	Clear
UHB01.P06	Pipe	12.000000 None	Clear
UHB01.P05	Pipe	4.000000 Roof Drain (dry)	Clear
HLS02.P04	Pipe	12.000000 Stormwater	NO FLOW
TCC01.P02	Pipe	12.000000 Stormwater	
TCC02.P01	Pipe	12.000000 Stormwater	
PHS08.P03	Pipe	12.000000 None	
FMC30.P01	Pipe	12.000000 Stormwater	Clear
FMC27.P02	Pipe	1.500000 Stormwater	Clear
FMC27.P01	Pipe	1.500000 Stormwater	Clear
FMC72.P01	Pipe	4.000000 None	
FDB07.P01	Pipe	4.000000 Industrial	Clear
FBC11.P01	Pipe	3.000000 Industrial	NONE
NOR10.P11	Pipe	8.000000 POOL	Clear
NOR07.P01	Pipe	12.000000 Stormwater	
NHC02.P01	Pipe	8.000000 None	
NHC01.P01	Pipe	12.000000 None	NONE
DCB02.P07	Pipe	12.000000 None	NONE
DCB02.P08	Pipe	12.000000 STORMWATER OR ILLICIT	Clear
DCB02.P09	Pipe	4.000000 Roof Drain (dry)	Clear
DCB02.P10	Pipe	4.000000 Roof Drain (dry)	NONE
DCB02.P12	Pipe	4.000000 Roof Drain (dry)	
TCL02.P01	Pipe	4.000000 UNKNOWN	
MBR14.P01	Pipe	4.000000 None	
LWS02.P01	Pipe	2.000000 None	
LWS06.P05	Pipe	10.000000 None	
LWS06.P01	Pipe	4.000000 None	
LWS09.P01	Pipe	4.000000 Roof Drain (dry)	
LWS10.P01	Pipe	4.000000 None	
LWS10.P02	Pipe	6.000000 None	
LWS10.P03	Pipe	10.000000 None	
LWS05.P01	Pipe	8.000000 None	
DCB01.P04	Pipe	12.000000 None	NONE
DGB06.P01	Pipe	12.000000 None	NONE
DGB06.P04	Pipe	12.000000 Industrial	NONE
DGB06.P05	Pipe	4.000000 Roof Drain (dry)	NONE
DGB06.P06	Pipe	4.000000 Roof Drain (dry)	NONE

PHS09.P01	Pipe	12.000000 None	
PHS09.P02	Pipe	12.000000 None	
PHS09.P03	Pipe	12.000000 Stormwater	Clear
DRN05.P01	Pipe	12.000000 None	
DRN28.P02	Pipe	12.000000 None	
DRN29.P09	Pipe	6.000000 None	
DRN29.P04	Pipe	12.000000 None	Clear
DRN30.P02	Pipe	12.000000 None	
DRN11.P10	Pipe	12.000000 Stormwater	Clear
DRN14.P01	Pipe	12.000000 None	None
DRN14.P02	Pipe	12.000000 None	None
DRN21.P02	Pipe	4.000000 NONE, BUT POSSIBLY FORM WASHING MACHINE	
DRN21.P03	Pipe	4.000000 NONE, BUT POSSIBLY FORM WASHING MACHINE	
DRN16.P01	Pipe	4.000000 None	NONE
DRN16.P05	Pipe	12.000000 Stormwater	Clear
TCC02.P06	Pipe	3.000000 None	
TCC03.P01	Pipe	4.000000 Roof Drain (dry)	
TCC04.P01	Pipe	4.000000 None	
TCC05.P01	Pipe	12.000000 None	
TCC05.P02	Pipe	12.000000 None	
TCC03.P02	Pipe	12.000000 None	
TCC03.P03	Pipe	12.000000 None	
TCC03.P04	Pipe	12.000000 None	
TCC03.P05	Pipe	12.000000 None	
TCC07.P02	Pipe	12.000000 Stormwater	Clear
TCC07.P07	Pipe	12.000000 None	
TCC07.P12	Pipe	4.000000 Roof Drain (dry)	
UPB32.P03	Pipe	12.000000 Stormwater	
UPB32.P02	Pipe	3.000000 Stormwater	
UPB32.P01	Pipe	3.000000 Stormwater	
UPB44.P02	Pipe	6.000000 Stormwater	Clear
UHB03.P12	Pipe	12.000000 Stormwater	Clear
UHB03.P13	Pipe	10.000000 Stormwater	
UHB03.P14	Pipe	12.000000 Stormwater	Clear
UHB09.P01	Pipe	12.000000 Stormwater	Clear
UHB09.P02	Pipe	12.000000 Stormwater	
UHB09.P03	Pipe	12.000000 None	

UHB09.P04	Pipe	12.000000 Stormwater	Clear
NHC02.P02	Pipe	12.000000 None	NONE
NOR12.P01	Pipe	2.000000 None	NONE
NOR02.P03	Pipe	4.000000 Industrial	Clear
NOR02.P01	Pipe	6.000000 Industrial	
NOR22.P01	Pipe	12.000000 None	
NHC19.P01	Pipe	12.000000 None	
NHC16.P02	Pipe	12.000000 None	
NHC15.P08	Pipe	12.000000 None	
NHC15.P06	Pipe	12.000000 None	
NOR12.P03	Pipe	6.000000 Industrial	NONE



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

Gerard Seeley, Jr.
Regional Director

July 7, 2004

Jeff W. Perry
Department of Public Works
P.O. Box 27032
Richmond, VA 23273-7032

Dear Mr. Perry:

Thank you very much for your written comment on the Tuckahoe Creek, White Oak Swamp, and Four Mile Creek TMDLs in Henrico County. Your comment is summarized below and along with our response.

1. County of Henrico Public Works staff located 200 unregulated point sources, or "straight pipes" during a county-wide stream assessment undertaken in 2000. They provided pipe diameter, type and quality of discharge, and latitude / longitude of each unregulated point source pipe. Henrico County staff request that DEQ staff investigate these pipes as part of any implementation plan.

Response: *DEQ appreciates that the County of Henrico has provided us with the locations of these pipes. DEQ pollution response staff has begun investigation of these pipes to include sampling and source identification. The complete investigation of these pipes is anticipated to take one year. Those pipes found to be illicit discharges will be further investigated to determine the source and corrective actions will be taken. This investigation will be included in the implementation plan if not complete by the time the plan is written.*

Please let me know if you have any questions regarding the information provided. I would be happy to make myself available to further discuss the TMDLs in Henrico County.

Sincerely,

R. Christopher French
TMDL Coordinator
Piedmont Regional Office, DEQ

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Public Comment, 3 pages

Re. Bacteria TMDL for Four Mile Creek, Henrico County, Virginia

From: Varina Environmental Protection Group

Marilynn Paschke, President, and Anne Morrow Donley, Information Officer

6133 Hines Road, Richmond, Virginia 23231 804-795-2214

February 25, 2004

In the first place, many thanks for the good work and the data provided.

Here are some comments and recommendations after our review of this report.

As the impaired segment of Four Mile Creek is essentially 31 miles long, this is a major problem for all those living in the areas touched by it, and the James River and Chesapeake Bay which are ultimately impacted by it. Since this area has been listed since 1998 as an impaired area, it is appropriate that actions be taken by every level of government to reduce the pollution, and to prevent any further increase in pollution. It is not a well known fact that it is easier to prevent further pollution than to clean it up. Our lifetimes will not be enough time to repair all the damage that has already accumulated.

Since this area has been listed as impaired on both the 1998 and 2002 reports, it was disappointing that the report did not make any recommendation regarding a moratorium on the reduction of building subdivisions and other development in the area since this is a most obvious source of future pollution from the bacterial and other pollutants, such as pesticides.

While the wildlife in the area were blamed for a great percentage of the pollution problem, no inference was drawn that the wildlife have been crowded more and more into concentrated areas due to the increase in development of the once highly forested lands.

The report noted that there is a daily average basis of 17% bacterial pollution from human sources with a land use consisting of residential and industrial areas composing approximately 6.0% of the land base. This includes apparently both the septic tank systems at many building sites, and the waste treatment area off of Kingsland Road.

It would follow then that with any increase in subdivisions, commercial development, quarries, and other development, there would naturally be a significant increase in the human pollution. The report only refers to fecal coliform bacteria, and does not appear to include any standard or sample collection of pesticide residue or other pollutants. All pollution increases with commercial and subdivision development.

Four Mile Creek, Page 2 of 3

Currently, Henrico County is considering more than 700 houses to be placed in several points in the vicinity of this area (ex. Route 5, Long Bridge Road, Turner Road, Osbourne Turnpike, etc.), which would more than double the percentage of acres developed, and significantly increase the human pollution percentage, raising pollution from bacteria, pesticides, and other pollutants. The aquifers that underly this area are in grave danger of being permanently polluted and unsafe. It has become obvious in the last several years that Henrico County does not place a high priority on the environmental protection of its citizens, their water supply, or the quality of the land. They have obviously not taken enough appropriate steps to protect the water and the citizens.

The only possible source of human fecal and E.coli bacteria that is now showing up in the Four Mile Creek watershed is from old septic systems. So even with the limited amount of present development, we are polluting the stream. And yet the county is allowing a phenomenal rate of development compared to the past knowing that at some point in the future we will have new failed septic systems and the other non-point pollution associated with subdivision development.

We know non-point pollution brought on by development is our biggest problem with the Chesapeake Bay, but we do not seem to be able to curb the development. Locally we are developing areas in the Four Mile Creek watershed using well water and septic systems. Long term we know this is going to be a problem for our waterways. Water and sewer systems are not the answer since the water supplies they utilize are already being polluted, and would increase development which would further pollute the community water supplies with bacteria, pesticides, and other pollutants. Can DEQ or the EPA minimize something that we know will be a future problem, or must we wait until the harmful effects show up as we know they will?

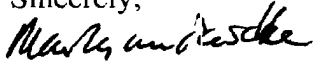
Pollution costs the various levels of government in clean up costs and in the health problems which begin and persist due to the pollution. Citizens have a right to expect that their health and welfare will be protected by the government as so stated in the Virginia constitution. There has been no action by the state. Again, this area has been on the impaired list since 1998, and Henrico County has acted only to exacerbate the situation, not to prevent it. Despite repeated pleas from citizens, for example, Henrico County has refused to enact regulations which would fix the number of acres for further development to a minimum of 5-10 acres for one house site, and to require woodland areas of at least 2 acres to remain in several points across the county.

Four Mile Creek, Page 3 of 3

Therefore, it is to be hoped that the state will require Henrico County to place a moratorium on any further subdivisions and commercial building until the pollution rates over the next few years, taken at several times, are shown to be decreasing, rather than increasing. This is the only measure that will make Henrico's officials, both elected and appointed, to take action to prevent any further pollution.

Thank you.

Sincerely,



Marilynn Pascake, President

Varina Environmental Protection Group



Anne Morrow Donley, Information Officer

Varina Environmental Protection Group



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Robert G. Burnley
Director

Gerard Seeley, Jr.
Regional Director

July 7, 2004

Ms. Marilyn Paschke & Ms. Anne Morrow Donley
Varina Environmental Protection Group
6133 Hines Road
Richmond, VA 23231

Dear Ms. Paschke & Ms. Donley:

Thank you very much for your written comments on the Four Mile Creek TMDL in Henrico County, submitted to us on February 26, 2004. Your comments have been summarized below. Our responses follow in italics.

Comment: The Varina Environmental Protection Group expressed disappointment that the 1998 and 2002 impaired waters lists did not recommend a moratorium on the reduction of building of subdivisions and other development in the Four Mile Creek area. The group also asked that the TMDL report include sampling for pesticides or other pollutants. The group asked if DEQ or the EPA can minimize future development in the Four Mile Creek watershed. Specifically the group asked if the state will require Henrico County to place a moratorium on any further subdivisions and commercial building until pollution rates in the next several years are shown to decrease rather than increase.

Response: *DEQ has no regulations by which to recommend or require a locality to place a moratorium on development. TMDL monitoring is restricted to the parameter that caused the waterbody to be placed on the impaired waters list. This is due to the vast expense related to the number of TMDLs to be developed by 2014, and the limited funds available for the monitoring. Therefore pesticides sampling, at a cost in excess of \$500 per sample, cannot be performed for the Four Mile Creek Bacterial and pH TMDL.*

Please let me know if you have any questions regarding the information provided. I would be happy to make myself available to further discuss the Four Mile Creek TMDL in Henrico County.

Sincerely,

R. Christopher French
TMDL Coordinator
Piedmont Regional Office, DEQ